

## **PERFORMANCE OF TARGET AFTER REJECTING AN ACQUISITION OFFER**

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## Abstract

The role of the management in the performance of completed M&A deal has been studied under different theoretical frameworks. Questions regarding the target management being overconfident or suffering from certain psychological biases or having a conflict of interest has been asked in this context. The same question could be asked about the management of the target in the M&A deals. This paper analyses such question by focusing on the targets that actively rejects an offer. The decision to reject an offer shows very strong signal about the target management belief in their company valuation since this means foregoing a usually significant premium in the offer. The central question is for these cases, whether a higher foregone premium would predict better performance afterward. The preliminary results show that a 1 percentage point increase in the premium rejected will lead to a 1.7 percentage point increase in the premium of the subsequently completed deal if there is one and also a .13 percentage point increase in the likelihood that the target will enter into another subsequent deal. These results might imply the idea that the target managers have a rational evaluation of their firm and was acting on behalf of their shareholders when they reject the original offer.

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**Keywords** keyword, keyword, keyword

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## 1. Introduction

When a firm rejects a takeover offer, on paper, there is a foregone immediate abnormal return since most offer includes a premium over the current trading price of the target's stock. There are valid reasons why such a decision makes sense: potential for the higher bidder, questions over bidder's financial capabilities, the target is undervalued by the market... There are also reasons that shareholders would not like: The management is overconfident in their ability to deliver higher value, biased in their valuation of the company, or they simply don't want to lose their job. Previous literature regarding managers of acquiring firm has identified problems of similar nature. (Mathew L. A. Hayward, 1997) Literature regarding takeover defense showed on average a negative impact when a company adopts takeover defense mechanisms, which seems to imply that the market is not convinced target management will be acting completely on behalf of the shareholders. (Malmendier, Opp, & Saidi, 2016) findings seem to support the story that if the target is undervalued, the takeover announcement and the payment medium being cash would reveal that information to the market and stock price would increase to reflect it. Whether this warrant the rejection decision is questionable still. The average offer premium for the target is 46 % (Malmendier et al., 2016), significantly higher than the 15% revaluation that a target would get after a withdrawn cash deal. Thus, whether the target management acts on behalf of the shareholders when they reject an offer is not fully understood. This is an important question to explore further because it can have an implication on the decision-making process when a firm is facing a takeover or merger offer.

The main question of interest in this study is whether the premium of the rejected or withdrawn deal relates to the subsequent performance of the target afterward. Answering this question should give insights into the bigger question of whether the target management is acting on behalf of the shareholders when they reject an offer.

If it is true that the target management is acting on behalf of the shareholder and they have perfect information regarding the valuation of the firm, the performance of the firm after the withdrawn deal should be better than the offer premium. In reality, there will be noises and variation in terms of the accuracy of the target management's valuation for their own firm and there will be unforeseen external factors that affect the firm's operation. There could also be psychological biases that lead to the target management consistently overvaluing their own firm. Therefore, the actual performance of the firm might never beat the offer premium. But if these noisy factors are sufficiently independent of the target management's will to act on behalf of

the shareholder, then we should still see a positive relationship between the foregone premium and the subsequent performance of the target if the target management trying their best to act on behalf of the shareholders when they reject an offer.

So as a hypothetical example, if two targets have the same management team and the management is acting on behalf of the shareholders, the higher the rejected premium, the stronger the reason the management must have to reject it and the better the subsequent performance should be, even if the subsequent performance doesn't beat the actual original premium. In the case that the target accepts a subsequent offer, it should materialize in the offer premium then. In the case that the target continues to exist independently, it should materialize in the form of higher cumulative abnormal return.

We are mostly interested in the cases where the target doesn't have clear information about the subsequent bid at the time of termination. In a situation when the target has information about competing bids, it would be very hard to justify going for the lower bid even if the management has conflicting interest with the shareholders.

While the target management might not necessarily be the decision-maker, they have a very strong influence on the probability of success of an M&A deal. The role of the target management in the success of the takeover attempts extend all the way through to post-merger integration. Support from the target management usually also means lower premium paid by the acquirer as well. The influence of other stakeholders in the decision is an important factor that is unaccounted for in this study. Whether these factors are independent from the management factor will greatly affect the explanatory power of the tests being done in this study.

To answer the main question whether there is a correlation between the foregone offer premium and the subsequent performance of the target, I study the performance of the target after they rejected an offer during the period from 1980 until 2018. The performance of the target is assessed in 2 ways: the premium received when the target enters into a successful deal or the likelihood of the firm getting another offer could be a good proxy for its success. Using these 2 measures for performance for the analysis, I documented a positive relationship between the premium foregone and the performance of the target subsequently. A 1 percentage point increase in the foregone premium will lead to a 1.7 percentage point increase in the premium of the subsequently completed offer and a .13 percentage point increase in the likelihood of the target getting another offer.

This result seems to point towards the idea that the target management is doing their job reasonably well. There are multiple challenges stemming from the design and the methodology of the study that prevents any generalized conclusion to be made regarding the intention of the target management when they reject the deal. At the very least, the result provides a good reason for further research with regards to the target's subsequent performance when its management reject an offer and its relationship with the target's management's agency behavior.

## 2. Literature review

### a. Agency costs in the principal-agents relationship:

The principal-agents relationship between the risk bearer or owner of the firm's security and the management that runs the daily operations of the firm is a contract with no inherent mechanism that ensures the agent is acting on behalf of the owner all the time. Agency theory has been a very prominent driver of the research in this matter. The basic assumption of the theory is the self-interest of the agents in the principal-agent relationship. Given the diverse interests in a corporation, this theory suggests that without deliberate alignment of incentives and information channel where principals could monitor the behavior of the agents, the agents will act on their own interest and not necessarily on the interest of the principal. In practice, the alignment of incentives could be done by linking the compensation with the performance of the firm, for example when the manager has a stake in the company or has stock options (Daily, Dalton, & Cannella, 2003), (Jensen & Meckling, 1976). The strong monitoring is usually carried out through a strong board of director's activity (Daily et al., 2003) (Fama & Jensen, 1983). Also, the agents might do things that signal to the principal their commitment to the interest of the principal. These actions and arrangements to mitigate the potential agency problems will incur a cost to the corporation, which is termed agency cost.

Besides the mentioned internal mechanism, the agency problem could be curbed also through external force of the takeover market. If a manager is not using the resources of the firm most effectively to create wealth for the investors, an external firm or management team could come in and replace the existing management through various forms of takeover or acquisition deals and improve the operation of the firm (Fama, 1980) This threat will help keep the agency problem in check.

Even though the logic seems very simple and believable, the actual empirical evidence hasn't shown overwhelming support for the theory.

On the one hand, we have supporting evidence that align with the predictions by the theory: (Core, Holthausen, & Larcker, 1999) study the relationship between the measures of

governance effectiveness of the board of directors and the compensation for CEOs and found that *ceteris paribus*, a weaker governance environment will give rise to higher CEO compensation.

(Himmelberg, Hubbard, & Palia, 1999) shows that the level of manager ownership in a firm is strongly related to the firm's specific characteristics regarding how easy it is for agency problem to incur. So in other words, for firms where there is a high chance of agency problem, the managers are inclined to hold more ownership to ensure the shareholders that he/she is acting on their behalf. (Bebchuk, Cohen, & Ferrell, 2008) documents a negative relationship between firm values and the index for management entrenchment among the indexes for corporate governance. The idea is that if a manager is more entrenched in a firm, the disciplinary force of the takeover market will affect him/her less; giving him/her more ground to make decisions that are suboptimal for the investors. Specifically regarding M&A activities, (Denis, Denis, & Sarin, 1997) studies the relationship between managerial ownership and level of diversification in the firm investment. It is easy to see that diversification within the firm as a benefit for the investor is redundant since the investors can do it themselves. However in the case of the managers of a firm, because their human capital is tied to the firm, it makes sense for them to diversify the business to reduce the risk to their employment, which is not to the benefit of the investors. (Denis et al., 1997) found that for firms with a lower level of management ownership, the diversification level is higher, implying that with weaker governance contracting, the agency problem is higher. (Amihud & Lev, 1981) also, find supporting evidence for this argument.

On the other hand, there is an argument in the opposite direction: Under a strong corporate governance policy, a manager might be inclined to make a safe decision in the short term and focus less on the longer-term strategic decision. This is because shareholders might have a shorter horizon for assessing the performance of the manager. So giving the manager more freedom could, in fact, lead to better corporate performance (Burkart, Gromb, & Panunzi, 1997). (Bauguess & Stegemoller, 2008) found no relationship between shareholder limiting power governance policy and management entrenchment behavior as well as the effect on firm wealth. In addition to that, (Daily et al., 2003) found no linkages between the level of equity holdings by the management, which is mentioned as one of the main methods of aligning the manager's incentive with the shareholder's, and the firm's financial performance.

Besides agency theory, there are alternative theories regarding the manager's motivation which points to more optimistic prediction. For example, the stewardship theory notes that a manager has a reputation to uphold. By performing his task well, maximizing the value to the

shareholders and being a good steward, he/she can improve their career. (Baysinger & Hoskisson, 1990; Fama, 1980). According to this the interest of the manager is aligned with the interest of the principals in the normal circumstances of operating the firm.

b. The main factors that could affect the success of a takeover deals

These include information asymmetry between the bidder and the target, change in market condition, external regulatory pressure and agency problems. By understanding these we can better judge how much the target manager should be accounted for in deal failure. If a deal fails for reasons outside the reach of the target manager then it is hard to link agency problem with the target managers. But on the other hand, it could be the target managers themselves who reach for external factors as a defense mechanism in a takeover bid.

Regarding the information asymmetry, at the start when the bidder proposes the offer, there will be private information of the target that the bidder doesn't have. Later on in the process of negotiating and due diligence, the bidder will probably be exposed to this private information. If there is a significant negative surprise, the valuation of the bidder might change so that the deal is not attractive to the bidder anymore and the bidder actively withdraws from the deal. (Skaife & Wangerin, 2013) found supporting evidence for this argument in the relationship of reporting quality of the target firm with the probability of a deal going bust. (Crocì, 2006) also finds that when the bidder withdraws from the deal, the negative abnormal return is larger compared with when the target withdraws, which also imply the existence of new negative information.

Regarding the change in the market condition and external regulatory pressure, there is no clear relation to the performance of the target firms afterward due to the same fact that these are external reasons. However, regarding the external regulatory pressure, (SAVOR & LU, 2009) has studied a sample of deals that failed because of this external reason and found out that the bidder firms which offer payment in equity perform significantly worse than their benchmark, which suggests a market timing effort from the bidder when they realize their stock is overvalued and try to use it to acquire less overvalued stocks. This is a probable scenario that the manager of the target firm must take into account when assessing an offer. However, this should not be the main reason to reject a deal because, after the deal, the investor could still liquidate the shares themselves if they don't trust the value of the share to be intrinsically correct)

On the direct link that has been documented between agency problem and the success of a takeover attempt on the side of the target firm, (Walkling & Long, 1984) has provided evidence



that showcases the effect of agency problem in the resistance of a target firm in a takeover offer. They documented that for deals where there is a larger possible wealth change for the managers to balance the high probability of losing his job, the resistance from the manager is less. Also, the higher the probability that the manager can keep his job afterward, the less resistance there is. On the other hand (Safieddine & Titman, 1999) documented an increase in managerial effort in improving the company performance after an unsuccessful deal by increasing leverage, focus on the core business and created a significant over-performance compared with their peers. This points the prediction towards managers acting on behalf of the shareholders when they reject the bid.

### c. Performance of target firms after unsuccessful deals

The takeover attempts, even failed ones, seem to create a significant effect on the target firm's operation. (Safieddine & Titman, 1999) found that after an unsuccessful deal, among the target firms there are outperformers which increased their leverage, focused their investment and ended up creating additional gains for the shareholders. These findings support the idea that there is, in fact, a variation in agency problem across firms, which can be proxied by the management actions after the deal failed. (Denis & Serrano, 1996) also documented a high turnover rate of managers after an unsuccessful control contest. Their explanation is that the control contest is a signal regarding poor management quality and motivates the large block holders to intervene and discipline the management.

The performance of the target after failed takeover attempts during the period of 1990 to 2001 has been studied by (Crocì, 2006). He found that upon the withdrawn announcement of the deal, target stock price will drop around 4% if the target rejects the deal but will drop around 14.5% if it is the bidder who actively terminates the deal. He also found that if the target continues to exist and no new acquisition offer arrives, the cumulative abnormal return is insignificant even in the long term. The paper argues that this is evidence to support the information theory when the reason for the withdrawal gives new information about the target valuation.

### 3. Research question and hypothesis:

The main research question of this study is the relationship between the foregone premium of a withdrawn deal and the subsequent performance of the target. Answering this question should provide additional insight into the question of whether the target management is acting on behalf of the shareholder when they decide against a takeover offer. If the management is rational about the valuation of their firm and is acting on behalf of the shareholders and their rejection is the signal of their belief, there should be at least a correlation between the offer premium

foregone in the rejected deal and the target subsequent performance. If the target management has perfect information regarding their own firm's valuation and are acting on behalf of the shareholder, the subsequent performance of the firm should be higher than the premium offered significantly. However, since the subsequent performance of the firm depends also on factors outside the control of the management and also since the rejection could be stemmed from factors not totally related to the valuation of the target in the deal, the actual performance of the firm might have so much noise that comparison against the offer premium become uninformative. Instead, a more relaxed but still relevant expectation given the logic is whether the subsequent abnormal returns correlate with the foregone premia offered.

The subsequent performance can be measured by the total cumulative abnormal return the target achieves after a certain period. If the target gets another offer later on and accepts the offer, the premium accepted as compared to the original premium could be used. Then also among this sample, the likelihood of getting another offer or getting acquired later on could also be used as a benchmark for performance. Due to the time constraint, this study will focus on the subsample of firms which get acquired eventually. This will have implications on the result of the study. There is a strong inherent selection bias in the subsample of the firms that eventually get acquired. They might have underlying characteristics different than the average target firm after a withdrawn deal. Therefore, the result of this study should be interpreted conservatively. In order to make any generalized statement, a more extensive study should be carried out where the subsample of firms which continue to exist independently after the withdrawn deal is also studied.

There are 2 main situations that a target firm might fall into regarding the takeover offers and these different situations have different implications regarding the target management decision making. There are many cases in which the target receive more than 1 offer at the same time and end up going with one of the offers. Then there are cases when the firm only receives 1 or more offers, reject them and then receive another offer that they eventually accept. In the former situation, the target management's ability to evaluate their firm is not revealed as clearly as in the latter case. So in the former case, even if the target management accepts the better deal most of the time, not much can be said about their ability to evaluate their own firm or whether they are acting on behalf of the shareholder. But in the latter case, if the target management rejects a deal without prior knowledge of another deal and then, later on, accept a better deal, that would be very good support for their valuation ability of their own firm and their stewardship towards the shareholder

So in short, this study will focus on the cases where the target rejects an offer with no prior information about a subsequent offer and eventually received a successful offer. The targets that continue to exist after a withdrawn deal are excluded from the focus of this study mainly due to limited time resource to carry out the data processing steps. This sub-sample of firms represents a significant group. Excluding this will reduce the explanatory power of the analysis significantly. However, the sample of firms that get taken over afterward should already be a good starting point for further research to be conducted.

So along this line of reasoning, I present 2 hypotheses which essentially try to assess the same relationship but using different samples and different method of evaluation.

Hypothesis 1: relationship between subsequent accepted premium to rejected premium: If the target management is acting on behalf of the shareholders and they are rational, I expect there to be a positive relationship here. My hypothesis is that **for firms that rejected a deal, the higher the foregone premium, the higher the subsequent premium of the completed deal.**

Hypothesis 2: the relationship between the likelihood of a completed offer to rejected premium: the same logic but with a different approach to assessing the target performance. My second hypothesis is **among all the firms that rejected an offer, the higher the premium foregone, the higher the likelihood of them getting into another deal**

#### 4. Limitation:

This research doesn't control for the other possible considerations: target management believes the acquirer doesn't have the ability to carry out a successful takeover either due to finance strength, lack of M&A capabilities, lack of experience? (reference...). Depending on how strong a correlation these factors have with the observed premium that was rejected, the regression estimate results might be biased.

While the target management plays a big part in the decision of the target regarding the offer, the Board of directors is the official decision-maker. Therefore, there would surely be uncontrolled factors regarding the Board's effect.

There might be a strong survivorship bias since the main sample of the study includes only the firms that survive until being acquired. However, even in this specific sample, just studying the correlation between the premium foregone and the subsequent performance without being able to make any more generalized conclusion is already very interesting.

The study only focuses on public targets. There might be differences in terms of the valuation method available compared to private targets.

## 5. Data and method:

### a. Data collection and description

Sample of M&A deals to be used: Withdrawn M&A deals from SDC. The period spans from 1980 until 2018. Only cases where the acquirer sought to acquire 100% of the target is included to simplify the analysis.

Among the deals collected from SDC, the deals that will be kept are those in which the target actively rejects the deal OR deals that the target gets acquired by another company later on. In order to classify whether it is the target that rejects the deal, the deal synopsis and history file data from SDC is used. If it is mentioned that the target rejected the deal then the deal is classified as such. These cases will be given a “rejection flag” that identifies them as a target-rejected deal. This is not a guaranteed method to correctly classify the deals since not all the important information might be captured but the alternative of manual search for historical files regarding the deal is not very feasible. This is also part of the motives for also including all the firms that will ultimately be acquired later on in the sample to be studied. Some of these firms probably reject the first offer but some probably do not and the deals are canceled for another reason. However, given the classification method used to identify the target-rejected deals in this study, it might be a sensible trade-off to also include cases where the target doesn't reject the deal so that the cases where the target rejects the deal but the synopsis text doesn't mention will also be included. The Venn diagram explains the relationship between the different samples.

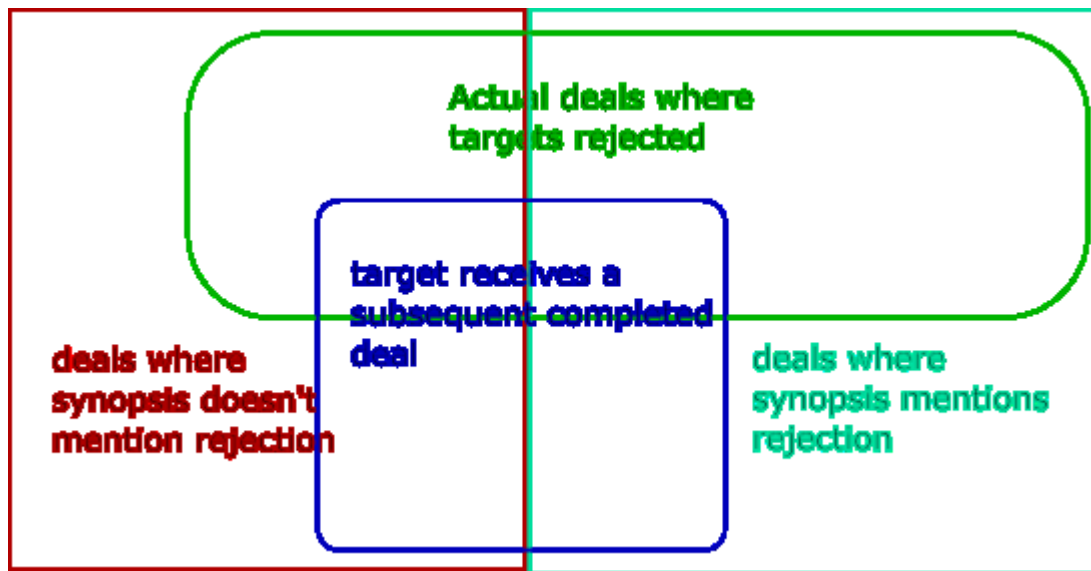


Figure .1: Venn diagram depicting the relationship of the data samples. Outside of the “actual deals where target rejected” set is the set of deals that failed for other reasons. Outside of the “target receives a subsequent completed deal” set is the set of deals in which the target remains independent after the deal withdrawal.

LBO withdrawn deals were excluded from the sample due to their difference in characteristics (since a large portion of these deals will have management of the target company be in the buyer side. The dynamic of the information and interest is different.

The whole sample of withdrawn deal consists of around 3000 observations, not all of them have all the data item. The summary of the statistical distribution of the variables of interest is as follow:

Table 1

summary statistics of the sample. The Maxofferreceived variable is the highest offer (in US\$) out of all the withdrawn offer that a target received. The Rejection flag is the total number of deals that a target had in which it rejected the offer. The Periodbetweenhighestwithdra variable captures the time difference between the withdrawn date of the highest offer a target receive until the announcement date of the ultimately completed deal. It is measured in years. This measure will help to distinguish between cases in which the target management has the information about the alternative deal before the make the rejection decision and cases in which they don’t. There are a few very extreme values due to the possible data problem where a few different companies have the same ID. The Pricepershare4weeksbefore variable is the price of the target stock price 4 weeks before the highest withdrawn deal was announced. The valuationofthehighestwithdr is the target size measured as the market valuation 4 weeks before the highest withdrawn deal was announced.

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	mean	sd	min	max
maxofferreceived	1,221	23.50	24.27	0.100	233.4
rejectionflag	1,592	0.449	0.724	0	6
periodbetweenhighestwithdra	1,592	1.495	5.543	-30.60	32.40
pricepershare4weeksbeforehi	1,436	14.91	16.79	0	124

offerpriceforearliestcomple	1,352	31.67	238.6	0.0100	8,750
valuationofthehighestwithdr	1,314	1,160	5,374	0.0210	113,644

The distribution of the number and valuations of withdrawn deals through time can be seen from Figure 2.

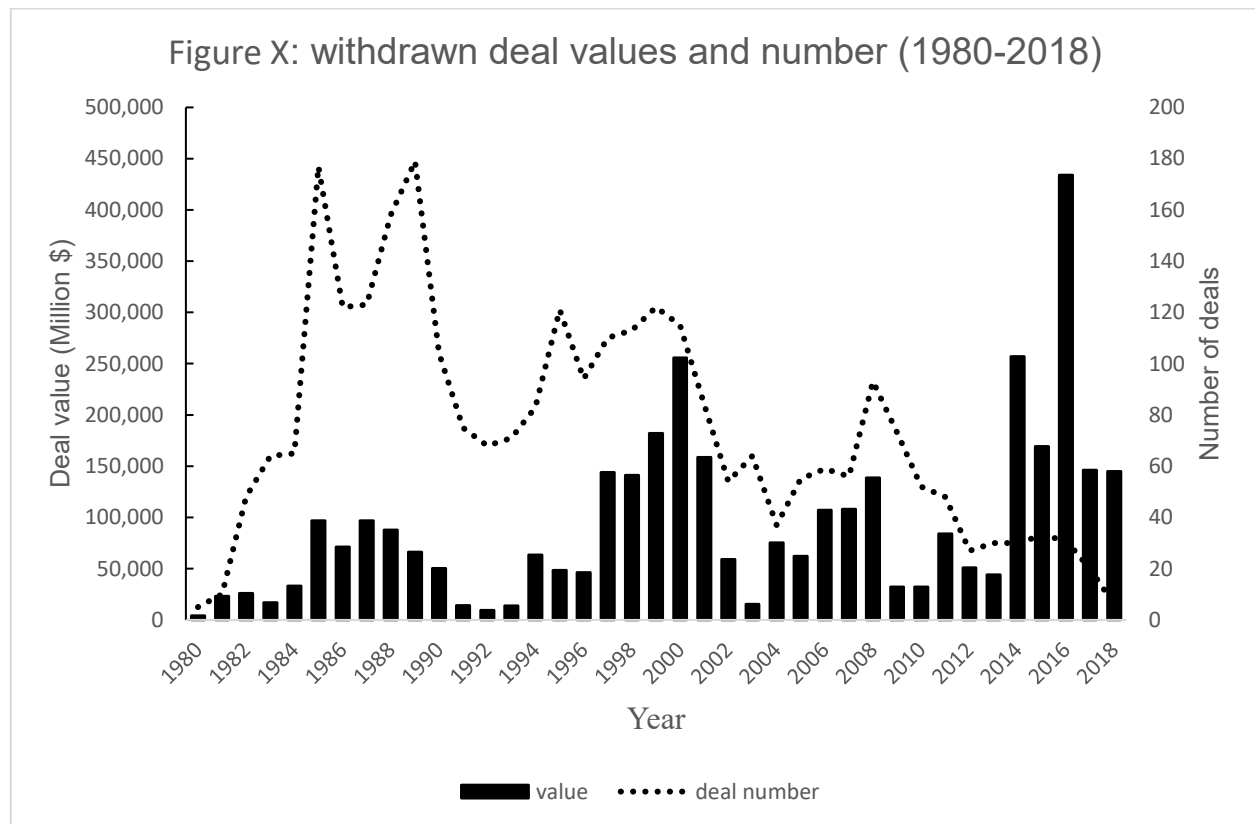


Figure 2

Evolutions of withdrawn deals from 1980 to 2018. The horizontal axis is the year. The left vertical axis denotes the valuation of the withdrawn deals (in million US \$). The right vertical axis is the number of deals

There has been a pretty significant decline in the number of withdrawn deals. The reason for this decline is unclear. A possibility might be the improvement of pre-deal announcement communication so that only deals that seem highly likely to go through will be announced. Also, the peak back in the 80s and 90s probably correlate with the more prevalent hostile approaches employed by acquirer back then. On the other hand, the total value of the withdrawn deal hasn't

decreased as much, meaning the average value of a withdrawn deal has gotten quite large in recent years.

The distribution of the number of failed deals a target received in the sample is summarized in Figure 3.

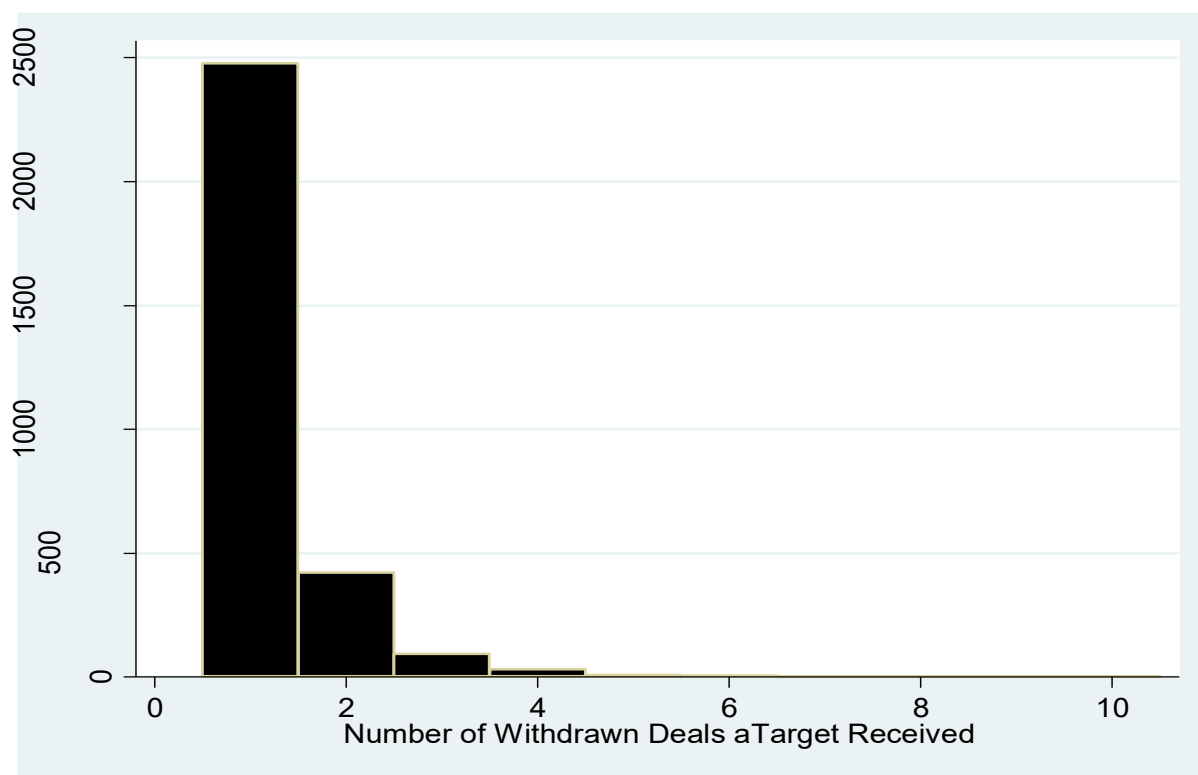


Figure 3

Depicts the situation of the targets that were part of at least 1 withdrawn offer in terms of how many withdrawn offers they received in total. The horizontal axis denotes categories in terms of the number of withdrawn deals a target receives during its lifetime. The vertical axis denotes how many targets there are in each category. The sample includes all public companies that have been a target of a takeover or M&A offer during the period 1980 to 2018 in the US

The distribution of the offer premium for the failed target deal is depicted in Figure 4.

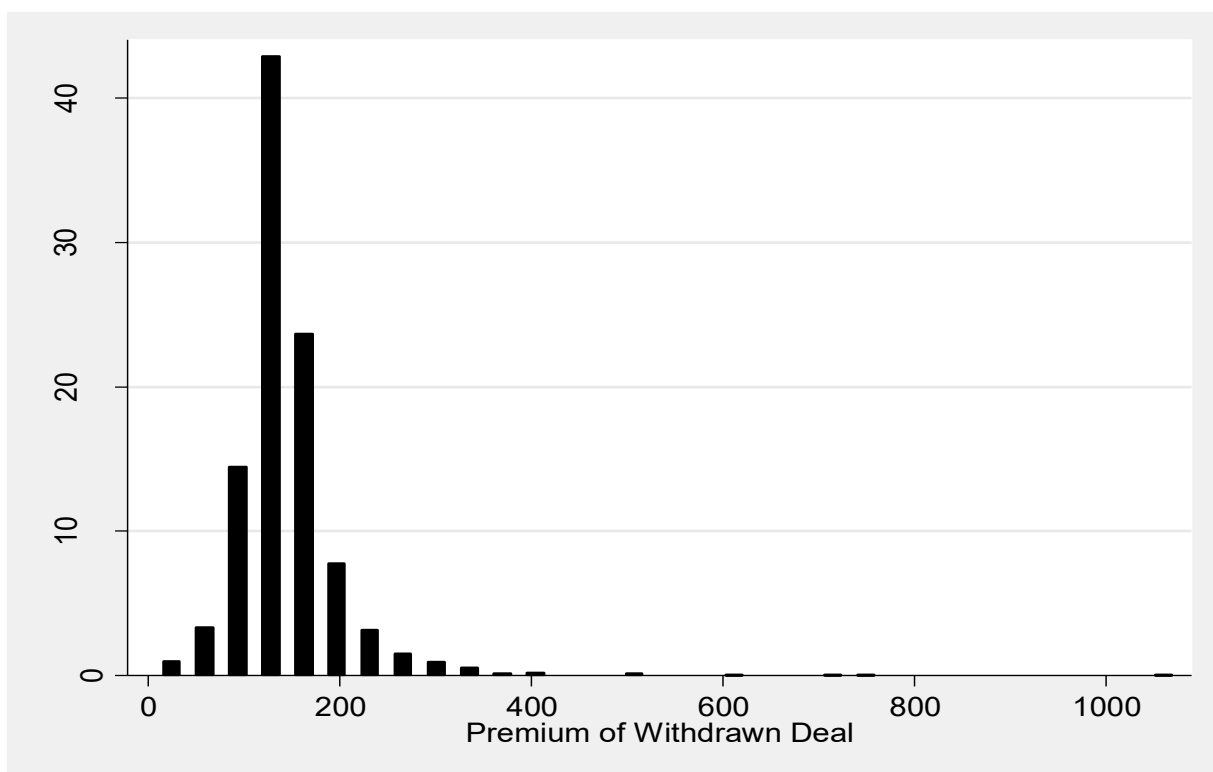


Figure 4

Distribution of failed deal premium for the failed deals between 1980 to 2018 in the US of public targets. The Premium0 is calculated as the offer price for the target's stock divided by the target's stock price 4 weeks prior to the deal announcement. The horizontal axis denotes the premium level. The unit of the horizontal axis is percentage point. The vertical axis is the distribution of the deals with each range. The width of each Premium bin is 20 percentage point.

The eventual destinies of targets which were involved in a withdrawn deal are shown in Figure



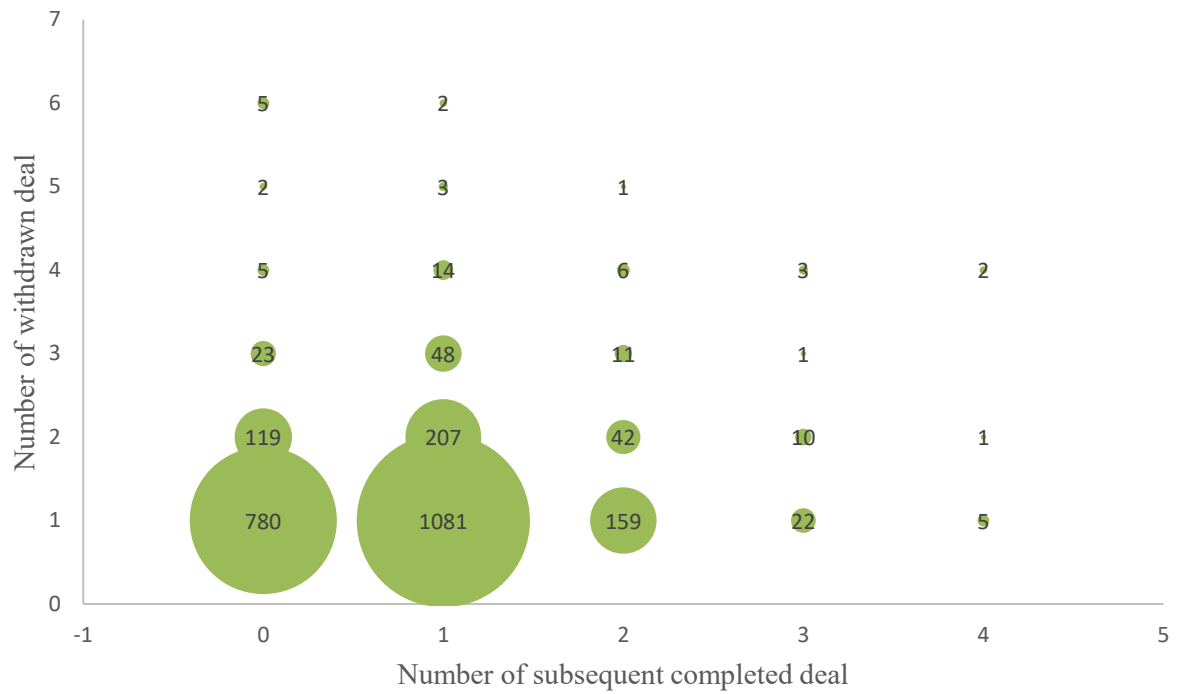


Figure 5 This figure shows what happen to targets after a failed takeover. The vertical axis denotes the number of failed deals that were offered to a target. The horizontal axis denotes the number of subsequent successful deal that target goes through. The size of the bubbles indicates the number of companies that fall into each combination of failed deals and subsequent successful deal. The period spans from 1980 until 2018. The targets are all listed companies in the US.

The distribution of the durations between the withdrawn deal and the subsequently completed deal is denoted in figure X.

Figure 6: Time between withdrawn and successful deal

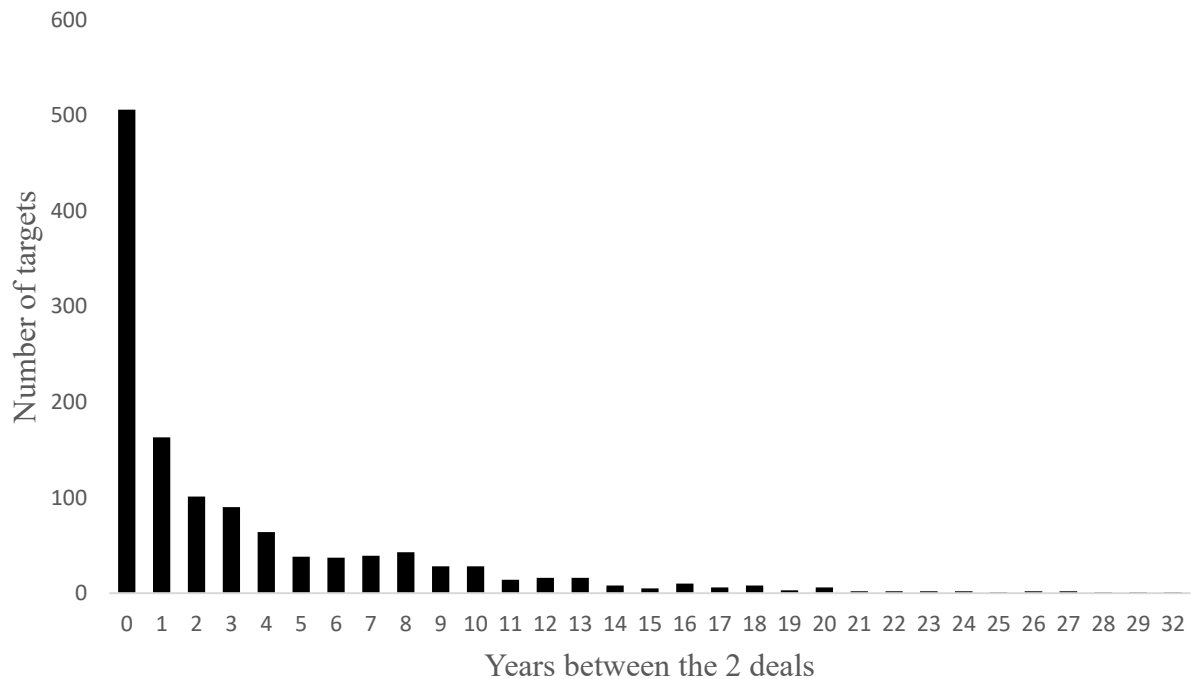


Figure 6 shows the distribution of targets according to the period between the withdrawn deal and the subsequent successful deal the target went through. The horizontal axis is the years between the failed deal and successful deal. The vertical axis is the number of targets that fit each group of the time difference. This sample filters out the cases where the duration value is negative, which mainly concerns cases where the target accepts one of the concurrent offers. The sample period is from 1980 to 2018

There are 711 cases out of the total sample size of 1611 cases in which the completed deal is overlapped with the withdrawn deal. In these cases, as discussed in the hypothesis section, the target management is in a very different situation as compared to cases when the deal is withdrawn before another offer is received.

Among these, 135 cases are situations where the completed deal was announced at least 2.5 years before the failed deal was withdrawn. There might be an error in the Datastream coding that makes the duration mismatch become too large or where the target was acquired before but remain an independent entity and much later gets another offer from another firm. These cases will be excluded from the study since they represent a very different situation of the firm than what the study is trying to investigate. The drop off point here is very much arbitrary and there can be a better approach here. I can go through the historical file and deal synopsis to check each case individually. However, these represent around 8% of the total amount of sample so the risk of dropping some important observation out of the sample is very small and it might not be worth the time.

Figure 7 then denotes the number of targets that reject at least 1 deal against later possible completion of another deal. The main thing to note here is among the sample, not all deal ends because the target actively rejects the offer. There are other reasons as well, such as financing problem on the acquirer's side, regulation problems such as antitrust law, due diligence problem when it is the acquirer that actively withdraws from the deal,...

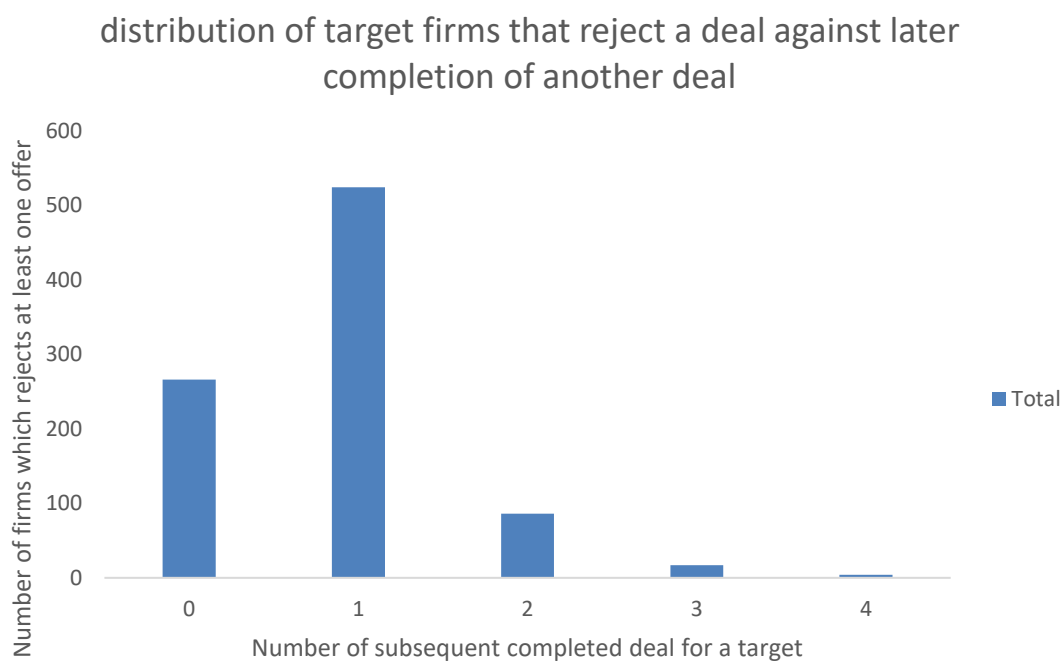


Figure 7 the eventual fate of the targets that “reject” an offer. The horizontal axis denotes how many subsequent completed deal the target gets into. The vertical axis is the number of targets fitting each group. The sample includes all companies that have received at least 1 takeover or merger offer during its lifetime during the period 1980 to 2018

In the study sample, 266 firms have actively rejected an offer and then never gotten another offer. The rest of the firms in the sample which have rejected an offer (around more than 600 firms) would, later on, be part of a completed offer. This graph hasn't taken into account the fact that for some cases, the time period between the withdrawn and the completed deal is too long that it is practically similar in effect to the case when the target is not acquired at all in terms of the ability of the target manager to anticipate a better deal or better performance elsewhere.

#### b. Methodology:

The measures to be used in the study and how they are calculated are described below:

The offer premium of the failed deal is the offer price divided by the target's stock price 4 weeks before the deal announcement. The measure is denoted  $P_0$

The takeover premium if the firm is eventually taken over is measured against the original stock price when the rejected offer was made. It is equal to the completed deal offer price divided by the price of the target share 4 weeks before the ORIGINAL withdrawn deal. This is a rather unconventional way to measure this. The goal of the analysis is to capture all the abnormal return the target has accumulated since the cancellation of the first offer. This includes all the abnormal return captured during the period the target continue to exist and the extra premium offered on top of this in the subsequently completed deal. Therefore, if the premium of the completed deal is measured normally as the price offered divided by the ongoing stock price the before the announcement, any abnormal return during the period in between won't be captured. Thus, by using the original stock price before the first failed deal, this problem is mitigated. Other problem stems from this measure though: the expected return component is also included in this measure of the premium and so on general the longer the period between the failed and completed deal, the higher this measure will become. To address this issue, there are 2 approaches. The first one is to include the duration between the withdrawn and completed deal in the regression analysis. The second approach is to calculate the total abnormal return that the target has been able to achieve until the completed deal by subtracting from the accepted takeover offer premium the "expected return" due to the correlation with the market return. The first approach will be used, and the second approach would be reserved for future study.

The time period between the first offer and the offer that was accepted ultimately: For cases in which the target only ever rejected 1 deal and accepted the next offer, the calculation of these figures is straightforward. For cases in which there are multiple offers overlapping, a summary number must be chosen: When a target receives multiple offers, the withdrawn offer with the highest premium is chosen. For cases in which the target gets acquired several times, the first deal in which the acquirer gains the majority of the stock holding will be used. The reasoning for these choices is as follow: When the target rejects multiple offers, the highest premium that was rejected should be the benchmark because, in an ideal world, that target management has to beat that premium at some point in time for the rejection to make sense. For the targets that eventually get acquired more than once, after the majority of the share has been bought, it is rather safe to assume that even if the target management remains, their influence on the future strategy and performance of the firm become a lot more restricted and the decision-makers that rejected the first offer most likely won't have any decision power anymore on what happens to the firm afterward.

For the first hypothesis, a cross-sectional linear regression estimation is used to estimate the relationship between the interested variables:

$$P_1 = \beta_0 + \beta_1 P_0 + \beta_2 \text{Reject} + \beta_3 \text{Reject} \times P_0 + \beta_4 \Delta T \text{ (eq. 1)}$$

Where the  $P_0$  and  $P_1$  denote the premium of the offer that was withdrawn and the subsequent premium of the completed deal if there is one. The Reject variable is a dummy that takes the value of 1 if the deal synopsis or history file has mentioned the rejection of the deal and 0 otherwise. The interaction term  $\text{Reject} \times P_0$  is introduced to capture the interaction between the target actively rejecting the deal and the relationship between the foregone premium and the premium accepted later.  $\Delta T$  is the time difference between the announcement date of the completed deal and the withdrawn date of the failed deal measured in years. This variable's purpose is to capture the explained return that correlates with the market.

For hypothesis 2, a binary outcome model is used to estimate the likelihood that the target firm will complete another deal, given their foregone premium and whether they actively rejected the withdrawn deal

#### 6. Multivariate results:

VARIABLES	(1) Linear estimation result For eq.1	(2) Probit estimation result
Premium0	0.0673 (0.236)	-0.0159 (0.0664)
rejectDummy	-2.626*** (0.951)	-0.516* (0.267)
rejectDummyXPremium	1.778*** (0.635)	0.339* (0.182)
periodbetweenhighestwithdra	0.0878*** (0.0306)	
Constant	1.492*** (0.408)	0.127 (0.109)

Observations	458	982
R-squared	0.039	

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Table 2 multivariate analysis result. Model (1): the result of the estimation for the regression model represented by eq.1. The estimate for the standard error is calculated using the heteroscedasticity robust estimation method. Model (2): Probit regression where the dependent variable is the deal dummy to depict whether the target will end up in a successful deal in the future and the independent variable is the premium of the withdrawn deal along with the rejection dummy and the interaction term.

This sample excludes all the deals in which the target receives the to-be-completed offer before the failed offer is withdrawn. These cases present a different scenario in which the information available to the target management is different. When included these cases to the regression, the regression estimate for the PremiumXReject gets even larger, implying that in cases where there is already a second offer on the table, the target management will very likely go with the higher offer.

According to the estimation result in the model (1), when a target explicitly rejects an offer, a 1 percentage point increase in the premium foregone will lead to a 1.7 percentage point increase in the premium of the subsequently completed deal if there was one. This relationship is significant at the 1% rejection level.

According to the estimation result in the Probit model (2), if a target has rejected at least one deal in the past, the likelihood of a target getting into another deal in the future is correlated with the premium forgone in the rejected deal. A 1 percentage point increase in the premium foregone will lead to an increase of .13 percentage point of the likelihood that the target will get and accept another deal subsequently and this relationship is significant at 5% rejection level

From this result, it seems both hypotheses are supported. Namely, the higher the premium foregone in the offer, the higher the subsequent performance will be for a target that rejects an offer.

It needs to be stated again that the result observed here doesn't explicitly support the argument that target management is better at valuing their firm compared to the acquirer. What has been shown by the data is a correlation between the premium foregone with the target performance afterward.

## 7. Robustness tests for further study

This section outlines the robustness tests that could be attempted to make the result more compelling.

The measures of Offer premium is done using only the value of the target stock price 4 weeks before the withdrawn deal with the highest bid. Robustness test could be done using different baseline measures such as trading volume-weighted average of the stock price during the 1 month or 1-week period before the announcement date.

In the regression model of eq.1, the time period between the withdrawn announcement and the announcement of the completed deal was included to control for the expected return component of the stock return. Instead, the actual abnormal return earned in the accepted deal could be calculated by adding the offer premium of the completed deal with the total abnormal return earned during the period between the 2 deals. The abnormal return during this middle period could be estimated by first estimating the individual stock return loadings on the different component of the Fama French 3 factors and then using these loadings to estimate the unexplained returns during the middle period. This alternative total abnormal return could be used in place of the Premium1 variable in the regression model eq.1 and the time period independent variable could be dropped from the regression.

There are other control variables regarding the target firm that hasn't been included in the multivariate analysis: target firm size, q ratio, industry fixed effect, year fixed the effect. These could be included in the regression to check if the observed effect still remains.

#### 8. Conclusion and suggestions for further research

The preliminary results show that for the target that rejects a takeover deal, the higher the premium foregone, the higher the possible premium if they accept another deal later.

Whether the target management is acting completely on behalf of the shareholders is not conclusive based on this evidence. At the very least, the evidence doesn't point to the contrary case where no positive relationship exists between the foregone premium and the subsequent premium, which would indicate a very large problem regarding the target management's valuation capability or agency problem.

There is a lot of consideration regarding the generalizability of this analysis. Due to the way the sample is created, there might be strong survivor bias since only firms with certain characteristics will continue to exist or get another offer. There are also many possible uncontrolled factors that might affect both the subsequent performance of the firm and their rejection decision.

All the robustness test suggestions would be a good place to continue with the study. The sample of firms which continue to exist independently after the withdrawn deal is the next potential

extension to the analysis. These further research should allow more conclusive generalization to be made regarding the alignment of the management decisions with the target shareholders' interest.

Also, for further research, it might be worth looking into factors that proxy for agency problem in the target firm and test to see if these factors have any effect on the likelihood of the target rejecting the deal or if these



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